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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,055	11/15/2001	Richard Lee Fink	12179-P092US	4370

7590 12/23/2003

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EXAMINER
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WILLIAMS, JOSEPH L

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary****Application No.**

10/002,055

**Applicant(s)**

FINK ET AL.

**Examiner**

Joseph L. Williams

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-10 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The amendment filed on 9/22/03 has been entered.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the grid substrate" in lines 2-3. There is no antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-10, 12, 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Akama (US 5,903,092).

Regarding claim 1, Akama ('092) teaches in figure 43 and in column 28, lines 46 through column 29, line 43, a display apparatus (no number) comprising: a cathode having an electron emissive material (101); a grid electrode (107a) positioned in

proximity to the cathode, the grid electrode having a plurality of grid portions (there are three rows of grid electrodes) each defining a pixel site; and control circuitry (118) for controlling each of the plurality of grid portions to independently cause an emission of electrons from the electron emissive material at each pixel site (see column 27, lines 64-67, the drivers are able to selectively operate the address and data lines, and also represented by three distinct lines from the driver), wherein the plurality of grid portions are electrically isolated from each other (each of the three rows of grid portions (107a) are electrically separated from each other by insulating layer by 105).

Regarding claim 3, Akama ('092) teaches the plurality of grid portions are substantially coplanar with each other (see figure 43).

Regarding claim 4, Akama ('092) teaches the plurality of grid portions further comprises a first grid portion (107a), a second grid portion (107a), and a third grid portion (107a), and wherein the control circuitry is operable for activating the first, second, and third grid portions individually from each other.

Regarding claim 5, Akama ('092) teaches that the plurality of grid portions are substantially coplanar with each other.

Regarding claim 6, Akama ('092) teaches that the grid electrode comprises a grid substrate (102), wherein the first, second, and third grid portions are mounted on the grid substrate.

Regarding claim 7, Akama ('092) teaches in figure 42 a display apparatus comprising: a cathode having an electron emissive material (101) a grid electrode (107a) positioned in proximity to the cathode the grid electrode having a plurality of grid portions each defining a pixel site and control circuitry (118) for controlling each of the plurality of grid portions to independently cause an emission of electrons from the electron emissive material at each pixel site wherein the plurality of grid portions further comprises a first grid portion, a second grid portion, and a third grid portion and wherein the control circuitry is operable for activating the first, second, and third grid portions individually from each other wherein the grid electrode comprises a grid substrate wherein the first, second, and third grid portions are mounted on the grid substrate, wherein the first, second, and third grid portions are electrically isolated from each other (each of the three rows of grid portions (107a) are electrically separated from each other by insulating layer by 105).

Regarding claim 8, Akama ('092) teaches in figure 42 and in column 27, lines 20-67 a display apparatus comprising: a cathode having an electron emissive material (101) deposited thereon; a grid electrode (107a) having first, second, and third grid portions; and a first control circuit for controlling activation of the first grid portion so as to control an emission of electrons from the electron emissive material proximate to the first grid portion; a second control circuit for controlling activation of the second grid

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portion so as to control an emission of electrons from the electron emissive material proximate to the second grid portion; a third control circuit for controlling activation of the third grid portion so as to control an emission of electrons from the electron emissive material proximate to the third grid portion, wherein the first, second, and third control circuits operate to control the first, second, and third grid portions independently from each other (see column 27, lines 64-67, the drivers are able to selectively operate the address and data lines, and also represented by three distinct lines from the driver), wherein the first, second, and third grid portions are electrically isolated from each other (each of the three rows of grid portions (107a) are electrically separated from each other by insulating layer by 105).

Regarding claim 9, Akama ('092) teaches the first, second, and third control circuits are operated in a matrix-addressable manner.

Regarding claim 10, Akama ('092) teaches the first, second, and third grid portions are substantially coplanar (see figure 43).

Regarding claim 12, Akama ('092) teaches that the field emissive material is a cold cathode.

Regarding claim 14, Akama ('092) teaches the first control circuit operates to apply a voltage to the first grid portion to cause an emission of electrons from the

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electron emissive material in proximity to the first grid portion, wherein the second control circuit operates to apply a voltage to the second grid portion to cause an emission of electrons from the electron emissive material in proximity to the second grid portion, wherein the third control circuit operates to apply a voltage to the third grid portion to cause an emission of electrons from the electron emissive material in proximity to the third grid portion.

Regarding claim 15, Akama ('092) teaches in figure 42 a cathode; and a grid electrode (111) having a plurality of individually controllable grid portions (111a and controller 118) for controlling emissions of electrons from a single pixel area of the cathode.

Regarding claim 16, Akama ('092) teaches the grid portions are controllable in a matrix-addressable manner.

Regarding claim 17, Akama ('092) teaches that the grid portions are coplanar.

Regarding claim 18, Akama ('092) teaches the grid portions are actively addressed.

Regarding claim 19, Akama ('092) teaches in figure 42 a display apparatus comprising: a cathode having an electron emissive material; a grid electrode positioned

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in proximity to the cathode, the grid electrode having N grid portions, each of the N grid portions defining a single N pixel element; and control circuitry for independently controlling each of the N grid portions to cause an emission of electrons from the electron emissive material at each of the N pixel elements.

Regarding claim 20, Akama ('092) teaches the control circuitry (118) at each of the N pixel elements is configured to cause an emission from only that particular pixel element in the display.

Regarding claim 21, Akama ('092) teaches display apparatus comprising:  
a cathode having an electron emissive material; a grid electrode positioned in proximity to the cathode, the grid electrode having a plurality of grid portions each defining a single pixel site; and control circuitry for controlling each of the plurality of grid portions to independently cause an emission of electrons from the electron emissive material at each pixel site.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akama (US 5,903,092) of record, in view of Fahlen et al. (US 5,589,731).



Regarding claim 13, Akama ('092) discloses all of the claimed limitations (see claim 8 above) except for the electron emissive material being a hot cathode.

Fahlen ('731) teaches in figure 15 and in column 25, lines 35-40 that a hot cathode can be interchanged with a cold cathode in a display device for the purpose of improving the efficiency of the emission layer.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hot cathode of Fahlen in place of the cold cathode of Akama for the purpose of improving the efficiency of the emission layer and thus improve the efficiency of the display.

### ***Response to Arguments***

4. Applicant's arguments filed 9/22/03 have been fully considered but they are not persuasive.

The Applicant has argued that the grid portions of Akama are not electrically isolated from each other, as disclosed in claims 1 and 8 of the instant application. The Examiner respectfully disagrees and points to figure 43, which discloses each of the three grid portions 107 are on an insulating layer with no conductive material connecting each grid. Thus it is the opinion of the Examiner that the grid portions of Akama are electrically isolated from each other.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (703) 305-1670. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**Joseph Williams**

**Examiner  
Art Unit 2879**